Region 41

Including the State of Utah

And

All political subdivisions

4.9 GHz Frequency Plan

June 21, 2004

Region 41

4.9 GHz Plan

Revision 1.1

1 Regional Committee Positions

At the first regional planning meeting held on November 21, 2003, Steve Proctor was elected Regional Chair. His contact information is:

Steve Proctor
UCAN
801-840-4201
steve@ucan800.org

Randy Auman was elected Vice Chair.
His contact information is:

Randy Auman
Logan City PD
435-716-9420
rauman@loganutah.org

Douglas Chandler was elected Secretary of the Committee.
His contact information is:

Doug Chandler
State of Utah
801-965-4538
dchandler@utah.gov

Tony Mason was elected Treasurer of the Committee.
His contact information is:

Tony Mason
Midvale City PD
801-256-2500
tmason@midvale.com

2 RPC Membership

Appendix A contains the membership list for Region 41. Membership is open to any interested party. Voting and operating procedures are described in Section 5 of this plan.

3 Region Description

Region 41 includes all 29 counties within the boundaries of the State of Utah –

Name	Population (2000 Census)	Land Area (mi)	Population Density (1/mi)
Beaver County	6,005	2590	2.319
Box Elder County	42,745	5723	7.469
Cache County	91,391	1165	78.479
Carbon County	20,422	1478	13.813
Daggett County	921	698	1.319
Davis County	238,994	304	784.929
Duchesne County	14,371	3238	4.438
Emery County	10,860	4452	2.439
Garfield County	4,735	5174	0.915
Grand County	8,485	3682	2.305
Iron County	33,779	3298	10.242
Juab County	8,238	3392	2.429
Kane County	6,046	3992	1.515
Millard County	12,405	6589	1.883
Morgan County	7,129	609	11.704
Piute County	1,435	758	1.894
Rich County	1,961	1029	1.907
Salt Lake County	898,387	737	1218.354
San Juan County	14,413	7820	1.843
Sanpete County	22,763	1588	14.333
Sevier County	18,842	1910	9.864
Summit County	29,736	1871	15.893
Tooele County	40,735	6930	5.878
Uintah County	25,224	4477	5.634
Utah County	368,536	1998	184.422
Wasatch County	15,215	1177	12.923
Washington County	90,354	2427	37.234
Wayne County	2,509	2460	1.020
Weber County	196,533	576	341.477

The geographic terrain in Region 41 is varied with elevations ranging from 2,000 feet to over 10,000 feet above sea level. Population centers are primarily concentrated along the Wasatch Front and in Cache and Washington Counties. Other counties in Region 41 have smaller centers of population with vast areas of sparsely populated deserts and mountains. Salt Lake, Weber, Davis, Utah, Cache, and Washington Counties require the most spectrum resources based on population density and public safety involvement in concentrated population centers.

4 Notification Process

The First Regional Plan Meeting was held on November 21, 2003. Notices were sent 60 days or more prior to the meeting, by mail, to APCO, FCCA, IMSA, ASHTO and the FCC. The meeting was advertised with the Utah Wireless Integrated Network Committee, the Utah Sheriffs Association, and the Utah Police Chiefs Association. The FCC issued a Public Notice of the meeting. The Utah State Office of Emergency Services sent representatives to the meetings and they represent National Security and Emergency Preparedness at the state level and also coordinate with local emergency preparedness offices. The convener, Steve Proctor also contacted several agencies via email that expressed interest in the planning process.

The second meeting was held on January 16, 2004. The FCC did not issue a Public notice for this meeting. The meeting was again advertised with the Utah Wireless Integrated Network Committee, the Utah Sheriffs Association, and the Utah Police Chiefs Association. During the meeting an opportunity was given for anyone not at the first meeting to object and ask for a revote on decisions made. No one came forward to object.

The third meeting was held on March 3, 2004. The FCC did not issue a Public notice for this meeting. The meeting was again advertised with the Utah Wireless Integrated Network Committee, the Utah Sheriffs Association, and the Utah Police Chiefs Association. A 4.9 GHz subcommittee was established to prepare a plan in compliance with the FCC directive in Docket WT00-32.

5 Regional Plan Administration

5.1 Operations of the Regional Plan Committee

Region 41 planning committee will use Robert's Rules of Order to conduct meetings. All decisions will be by clear consensus vote with each Public Safety Agency having one vote. The meetings are open to all persons and a public input time is given for anyone to express a viewpoint or to have input to the planning process.

Subcommittees may be formed as needed to work on specific issues. For the initial plan, five subcommittees were formed – Implementation, Technology, Interoperability, Mobile Data, and 4.9 GHz. Subcommittees are intended to work on specific assignments and make recommendations to the full committee. Any changes to the regional plan must be voted on and approved by the full Regional Plan Committee. Subcommittees are open to any person wanting to participate. The Chair of the Regional Plan Committee appoints the Chair for each workgroup.

A minimum of one meeting per year will be held including the full Regional Planning Committee. This will be announced and advertised 90 days in advance by the Committee Chair. Beginning two years after Federal Communications Commission approval of this Regional Plan, the Chair shall call a meeting of the Committee to elect a Chair. Vice Chair and Secretary will also serve two-year terms. There is no limit to the number of terms that may be served. If the Chair is unable to serve a complete term the Vice Chair will serve as Chair until the next election meeting. If both the Chair and Vice

Chair are unable to serve full terms the Secretary will call a special meeting of the Committee to elect replacements. If for any reason the Secretary is unable to call a special meeting, the State or any County within the region may call for a special meeting, giving at least 90 days notice to elect replacements.

5.2 Procedure for Frequency Coordination

Prior to making application for new 4.9 GHz operations, from the Federal Communications Commission, eligible entities will contact the Regional Planning Committee, in writing, and advise the committee of intended operations in the 4.9 GHz Spectrum. Licensed operations not already on record with the Regional Planning Committee will be secondary to coordinated frequencies until the licensee contacts the Regional Planning Committee, in writing, and provides information about existing and intended operations in the 4.9 GHz spectrum.

The Regional Planning Committee will create and maintain a regional database for the purpose of coordinating 4.9 GHz spectrum resources in areas where multiple 4.9 GHz operations are proposed. The Regional Planning Committee will act as a clearinghouse for public safety agencies providing information and facilitating resource sharing where feasible. Requests for frequency coordination will be submitted to the Regional Planning Committee in writing. The Regional Planning Committee will appoint a frequency coordinator and alternate coordinator who will review the request and make a recommendation to the RPC Chair within 30 days from the date the request is received.

Coordination documentation will be provided to the applicant and existing licensees within 20 miles of the proposed area of operation upon request.

5.3 Adjacent Region Coordination

Region 41 shares borders with Arizona, Nevada, Idaho, Wyoming, and Colorado. The region has a small population density along all borders and will coordinate 4.9 GHz mobile and fixed operations with adjacent regions within 20 miles of any border.

5.4 Dispute Resolution

In the event an agency disputes the implementation of this plan after FCC approval, the agency must notify the Chair of the dispute in writing. The Chair will attempt to resolve the dispute on an informal basis. If a party to the dispute employs the Chair, then the Vice Chair will attempt resolution. In such cases, the Chair shall be deemed to have a conflict of interest and will be precluded from voting on such matters. If after 30 days the dispute is not resolved, the Chair (or Vice Chair) will appoint an ad-hoc Dispute Resolution Committee. The committee shall be comprised of a member from the State of Utah, Department of Public Safety, and members selected from representatives of the counties in the region, the City of Salt Lake and the City of Logan. No member selected may be from an agency involved in the dispute. The Dispute Resolution committee will select a Chair to head the committee. The Regional Plan Chair (or Vice Chair) will represent the Region in presentations to the Dispute Resolution Committee. The Committee will hear input from the disputing agency, any effected agencies and the Region Chair. The Committee will then meet in executive session to prepare a recommendation to resolve the dispute. Should this recommendation not be acceptable to the disputing agency or agencies, the dispute and all written documentation will be forwarded to the Federal Communications Commission for final resolution.

6 Interference Protection

The Regional Planning Committee does not guarantee interference protection in the 4.9 GHz spectrum. Systems should be engineered to facilitate resource sharing where feasible. 1 MHz channels (1 – 5, and 14 – 18) will generally be allocated for permanent Fixed Point to Point operations. Mobile operations on channels 1 – 5, and 14 – 18 will require special coordination. 5 MHz channels (6 – 13) will generally be allocated for Mobile WAN, PAN, VAN, and Mobile Mesh operations. Aggregation of channels to achieve greater operational bandwidths will require special coordination.

7 Allocation of Spectrum

The FCC permits aggregated channel bandwidths of 5, 10, 15, or 20 MHz. Channel numbers 1-5 (yellow) and 14-18 (blue) are 1 MHz channels. Channel numbers 6-13 (green) are 5 MHz channels.

Center Frequency (MHz)	Channel Nos.
4940.5	1
4941.5	2
4942.5	3
4943.5	4
4944.5	5
4947.5	6
4952.5	7
4957.5	8
4962.5	9
4967.5	10
4972.5	11
4977.5	12
4982.5	13
4985.5	14
4986.5	15
4987.5	16
4988.5	17
4989.5	18

7.1 Permission To Use Frequency / Frequency Assignments

Responsibility to coordinate 4.9 GHz frequency usage falls to the Regional Planning Committee. The committee will appoint a frequency coordinator who will maintain a database of frequency usage and will coordinate usage to favor the sharing of infrastructure and technologies among multiple licensees operating in the same geographical area.

7.2 Mobile Operations

Mobile operations will be allocated with a minimum of one 5MHz channel up to an aggregation of four 5MHz channels. Channels 6 – 13 are allocated for mobile operations.

7.3 Temporary Fixed Links

Mobile operations can be extended to include a temporary fixed application for up to one year on a secondary basis. Temporary Fixed operations will require special coordination. Channels 6 – 13 are allocated for mobile and temporary fixed operations.

7.4 Fixed Point-to-Point

Fixed Point-to-Point operations require an FCC license at every specific location. The coordination of Fixed Point to Point operations will require applicants to contact the 4.9 GHz subcommittee within the Regional Planning Committee, in writing, with a request for coordination prior to filing an application with the Federal Communications Commission.

7.5 System Implementation

Public Safety entities are encouraged to partner in system infrastructure where geographical boundaries of jurisdiction overlap. To date, no technical equipment standards have been adopted by the Federal Communications Commission for operations in the 4.9 GHz spectrum.

7.6 Priority Matrix

Incident commanders will have authority to establish user priority and temporary rules of operation on all 4.9 GHz systems operating within 5 miles of the incident command but will make reasonable attempts to coordinate frequency usage with other existing users of frequency that has been approved through the 4.9 GHz subcommittee.

Appendix A

Committee Membership

Name	Agency	Phone Number	E-Mail
Scott Mattson	South SLC PD	(801) 412-3690	smattson@sslc.net
Ken Morgan	West Valley City	(801) 963-3234	kmorgan@mail.westvalleycity.ut.gov
Jeff Dial	St. George PD	(435) 634-5939	jdial@sgpdm.state.ut.us
Rick Bailey	San Juan County	(435) 587-3225	rmbailey@sanjuancounty.org
Merv Gustin	Duchesne County	(435) 738-2015	mgustin@co.duchesne.ut.us
Jim Stewart	Utah Ed. Network	(801) 718-6500	jstewart@uen.org
Dan Pearson	South Jordan PD	(801) 253-5225	dpearson@ci.south-jordan.ut.us
Dean Cox	Washington County	(435) 467-3095	deanc@washeriff.net
Robert Roth	Uintah County	(435) 789-2511	rroth@co.uintah.ut.us
Lloyd Johnson	StateDNR	(801) 538-7244	lloydjohnson@utah.gov
Tim Slocum	State UDC	(801) 576-7837	tslocum@utah.gov
Russ Adair	Draper PD	(801) 576-6315	russ.adair@draper.ut.us
Al Holland	Salt Lake City	(801) 799-3130	al.holland@slcgov.com
Ryan Larkin	Washington County	(435) 656-6695	rlarkin@washeriff.net
Philip Bates	State DPS	(801) 965-4791	pbates@utah.gov
Tim Cornia	State DPS	(801) 965-4250	tcornia@utah.gov

Appendix B

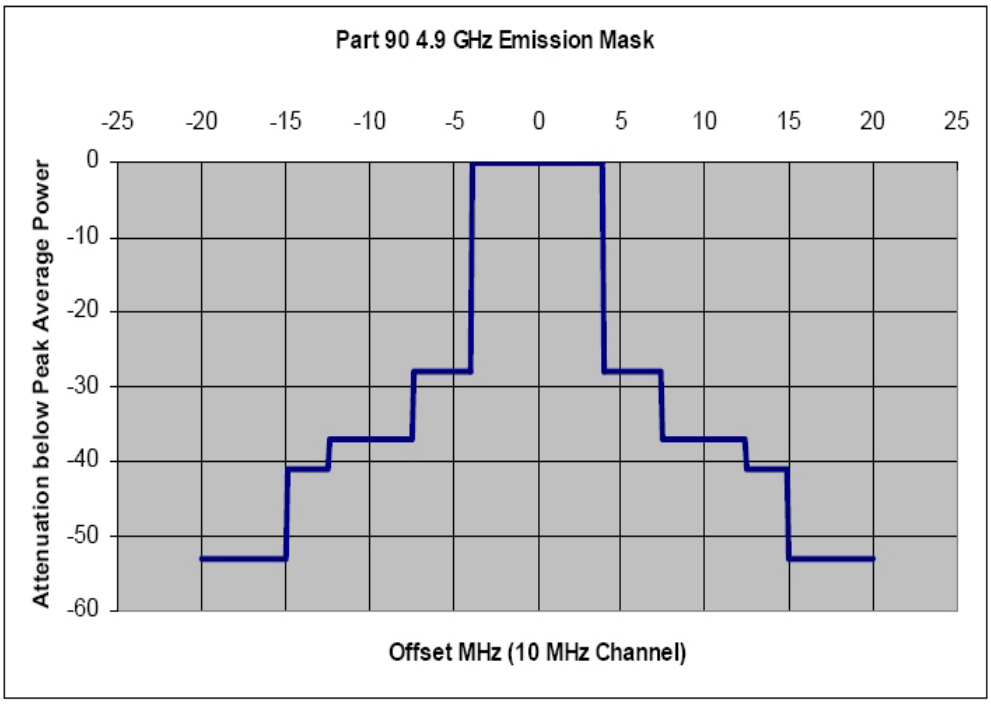
Technical Reference

Power Limits

1 MHz Channel - 20 dBm (100 mW)
5 MHz Channel - 27 dBm (500 mW)
10 MHz Channel – 30 dBm (1 Watt)
15 MHz Channel – 31.8 dBm (1.5 Watt)
20 MHz Channel – 33 dBm (2 Watt)

If transmitting antennas greater than 9 dBi are used, the peak transmit power must be reduced by the amount in decibels that the directional gain of the antenna exceeds 9 dBi. Fixed Point to Point operations are allowed up to 26 dBi antenna gain.

Emission Mask



Mask scales to bandwidth

1 and 5 MHz channels available, can combine up to 20 MHz